

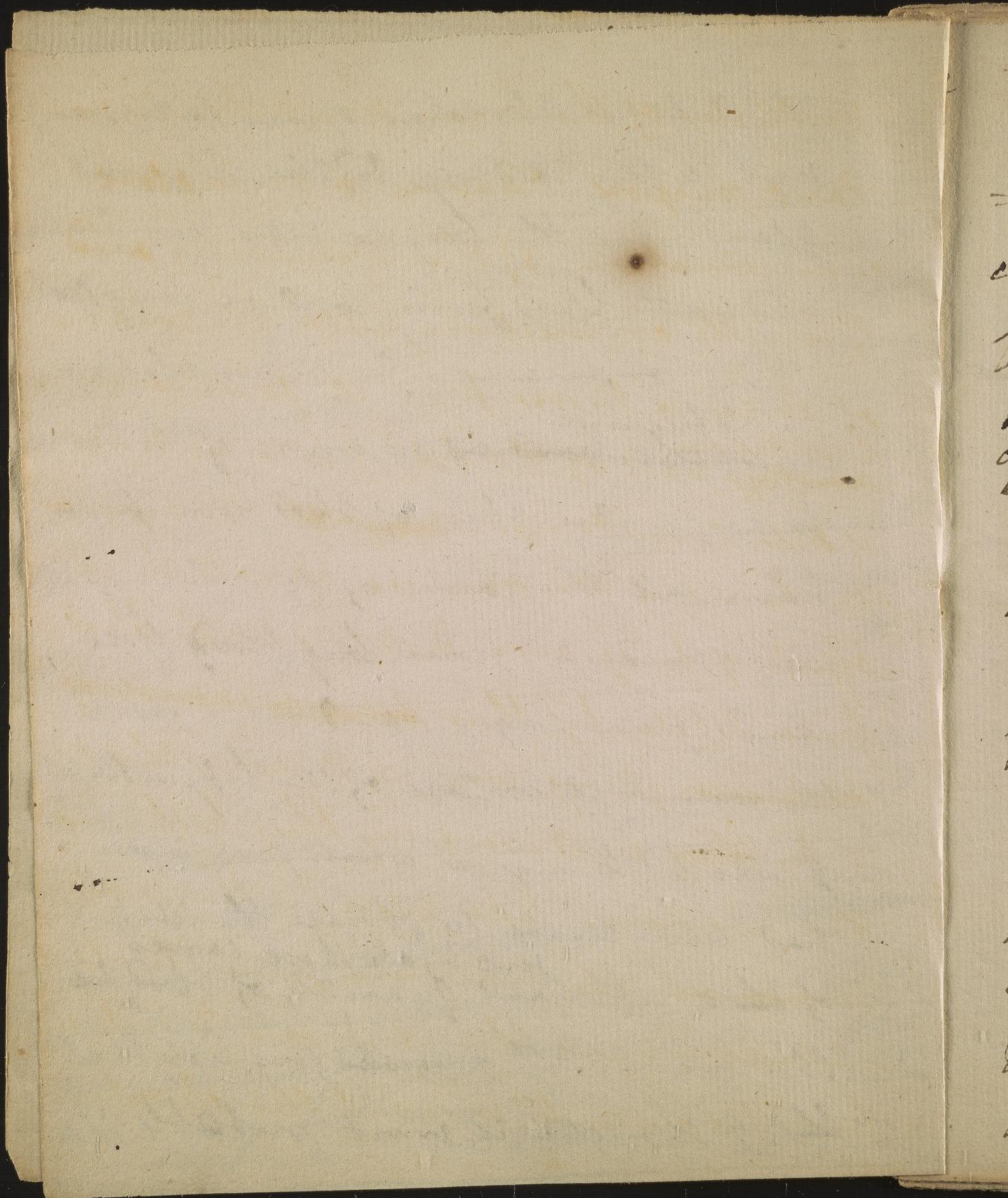
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Let come now to treat of the cerebral states of
fever. Before I enter upon this subject I
shall deliver some remarks upon the brain
and its appendages which are partly of a phy-
siological and partly of a pathological & practical
nature.

I taught you in our physiology that
~~the system~~ ^{the} in early part of our course ~~to~~ ^{for}
treating upon the circulation of the blood,
I said ^{maker} that the ~~mother~~ of our bodies had guards
against ~~the~~ inordinate or tumultuous
motions ^{of the blood} by means of the spleen when
the blood vessels were unusually excited through-
out the whole system - by the Thymus
gland when it was ^{determined in} ~~unusually~~ an un-
usual quantity to the lungs, by the

the extirpation of the
are ~~expansion~~
V I formerly supposed from a ~~fact~~ ^{fact} made
upon the Thyroid glands by Mr Cooper pro-
-ducing febrility in dogs, that this gland ser-
-ved to arrest and detain the blood when too
forcibly determined to the brain. But I ~~not~~
~~not believe in this~~ ^{capacities} of that gland,
to be from the small ~~fact~~ ^{fact} and from ~~any~~ ^{any} not admitting the
inferences ^{from} of Mr Cooper; ~~fact~~ ^{fact} experiments
I have rejected that supposition. Dr Reeve
in his essay on Criticism published in the
5th vol: of the Edin^g medical and surgical journal
tells us that in those countries where Critic
are most numerous, many people of sound &
vigorous minds have Bronchople, and that the
combination of Bronchople and ^{distortion} ~~distortion~~
is altogether accidental. The Thyroid gland,
believe arrests nervous determination to the
brain only, but never arterial. Its use, I expect ^{I expect} ~~believe~~
is chiefly as a waste gate to the ^{larynx} ~~larynx~~ in
singing and speaking.

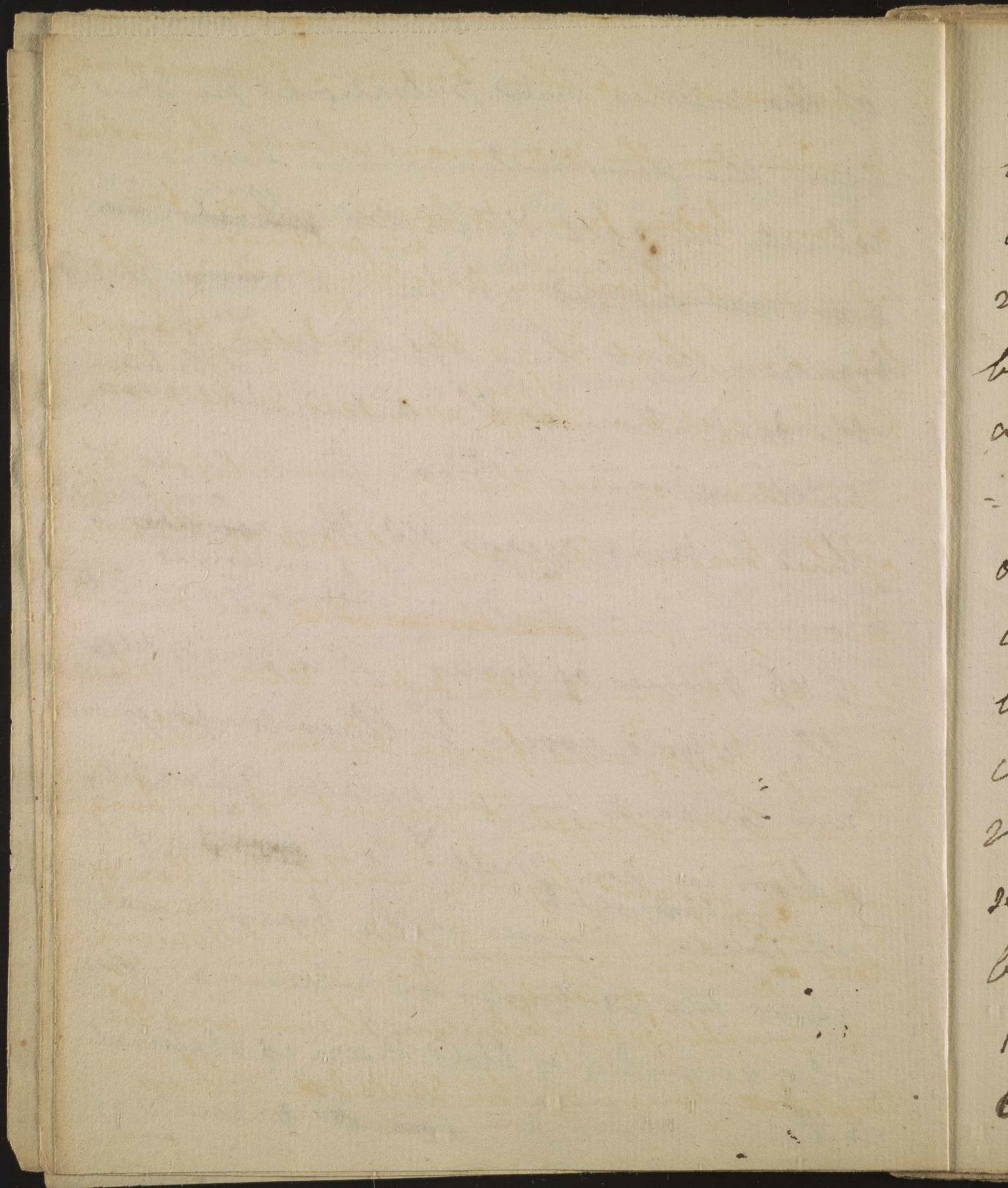
Glandula renalis when it was too copiously
sent to the kidneys, & ^{by} the Thyroid
Gland when the Larynx was over disten-
-ted with blood from loud, or long spea-
-king, or singing. ^V In contemplating
the ~~excessive~~ ^{frequent} exposure of the brain
to an undue flux of blood from fever,
from all the causes of apoplexy, pal-
-sies & stupors, from long blood-spea-
-king, from anger, and even from
the recumbent posture of the body in sleep,
I was led to inquire what provision
had been made to obviate the ill effects
of ~~the~~ a redundant quantity of blood ^{sent by all those causes} to
the brain. I suggested formerly that
~~the~~ I thought it most probable the



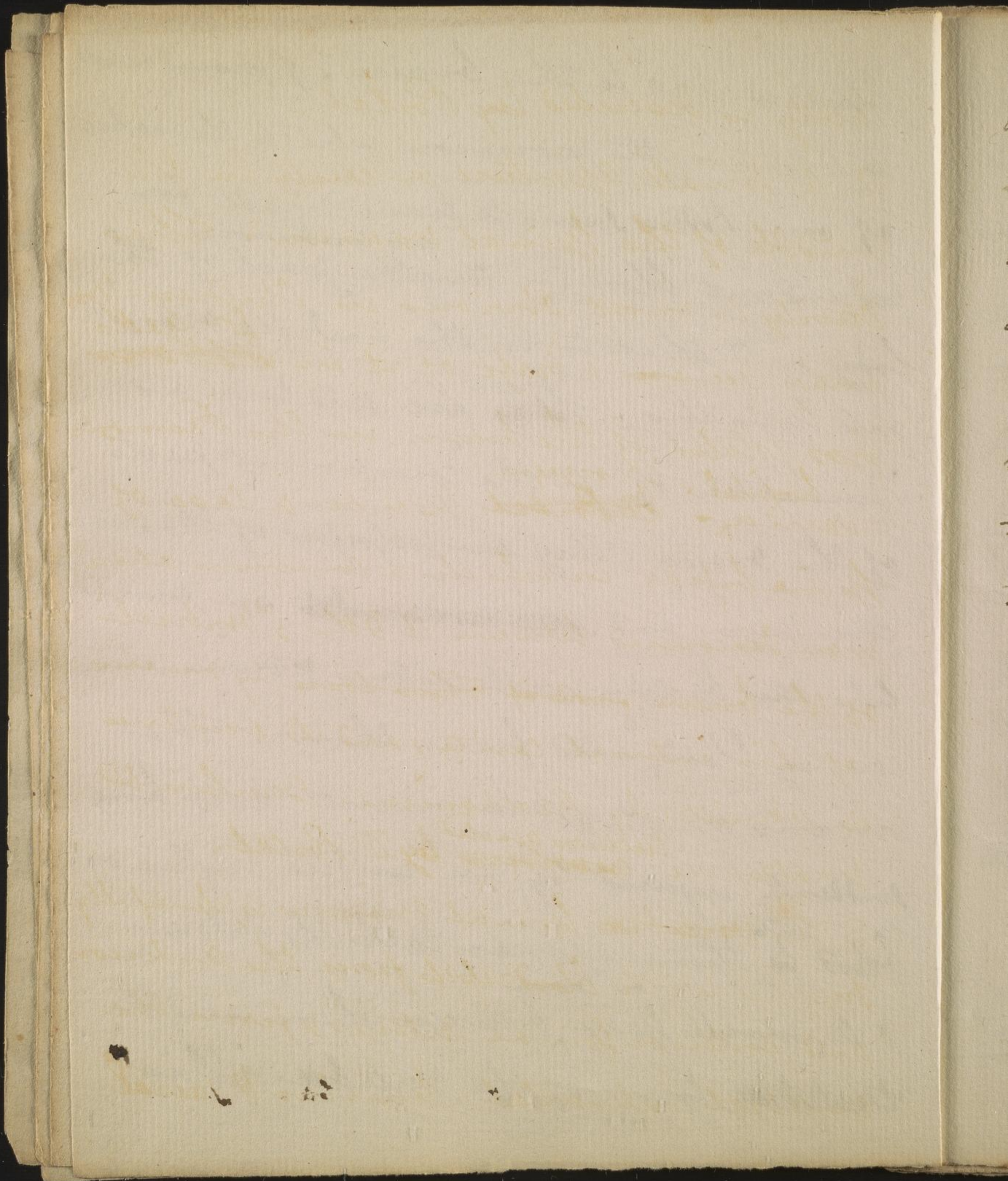
Ventricles of the brain served this impor-
-tant purpose. From a more close
examination of this opinion, and
from its connection with the means
of obviating disease from the same causes in
a continuous
~~part~~ part of the body I have no doubt
of its correctness. ~~From the~~ The lungs &
the liver and the pancreas obviate the ill
effects of being over distended with blood
for a while, by their ~~being so capable of~~
~~distending~~ giving way as it were, that
is by ~~their~~ increasing in their bulk, but
this can never take place in the brain.
~~It has~~ The Cranium prevents its
dilatation; and this it is said to such a
degree as even to prevent the elevation

✓ Indeed there can be no doubt of
this being the case, Baglivi tells us
he found ~~big~~ of coagulated blood in
the Ventricles of the famous Anatomist
Malpighi who died of an apoplexy.
Allowing the bloodvessels to be in part
emptied of their blood to admit of this
large accumulation of it in the Ventricle
-les, still it shows that they are capa-
-ble by compression of affording room
for more than five or six ounces of
redundant blood.

its
of the arteries inter pulsation. In this
case, the Ventricles ~~which~~ these cavities
which we call Ventricles ~~which are~~ ^{give way}
~~separated~~ ~~apart~~ or become ~~more~~ ^{more} pressed
together, and thus afford more ^{room} for
the distention of the Arteries ^{of the brain} ~~veins~~
with redundant blood. In a child of
three or four years old, they ~~contain~~ ^{are found} to
contain in a hydrocephalus ^{internus} from 3 to
5 or 6 ounces of water. It is probable
they afford room by their compression
and contact for a greater quantity
of blood in an adult. It is ~~impossible~~ ^{longitudinal} possible
the lateral sinuses of the brain may
assist the Ventricles by retaining a greater
quantity of blood than is natural
to them, when an ~~unusual~~ ^{unusual} quantity of



blood is sent to the brain. I proceed next
to mention the provision which the maker
of our bodies seems to have made for
redundant blood in another ^{and continuous} part of the
body, and that is in the medulla oblongata
and spinalis. ~~They~~ ^{These} are said to be a con-
-tinuation of all the component parts
of the brain. They are composed of the same
coverings, and ~~are surrounded~~ are provided
like the brain with arteries & veins which
carry blood ^{to} and from them. The
means employed to prevent their being
suddenly injured by an undue influx of
blood ^{into} ~~to~~ them appear to be the following.
1 A small space ^{or cavity} between them and the
~~vertebrae~~ bones of the vertebrae. This



cavity is described by Portal

2 a small aperture or cavity in the middle of the spinal marrow. This cavity is most obvious in children. You may see ~~in~~ a draft of it in ~~Dr Gall's~~ ~~Dr Gall's~~

~~two~~ plates of the brain in the Pennings-
hospital. Morgagni
-varian- ~~Dr Portal~~ describes a case of

Spina bifida in which a communication was discovered between it & the 3rd ventricle of the brain ~~and of this case~~ by means of this internal cavity, and its existence is admitted by Piccolomini, Bouchier & Malphigi ^{author quoted} ~~according~~ by Dr Portal.

3 The ~~vertebrae~~ spinal marrow is plentifully supplied with bloodvessels from the anterior and posterior spinal arteries & from the vertebral, intercostal, lumbar & sacral

Dr Portal mentions two striking facts in support of the opinions I have advanced. 1 In a child affected with Spina bifida he distinctly saw the tumor enlarged in every respiration, and shrank in every expiration. This child died. He found after death a cavity large enough to admit a quill which communicated with the 3rd ventricle of the brain. 2 He opened & inspected the vertebrae of several dogs & cats & distinctly saw the Medulla Spinalis enlarged & shrank with each inspiration, and expiration. These motions extended only to 3rd and 4th ~~vertebrae~~ cervical vertebrae in both cases. Vol: IV. p: 66.

Arteries. The Veins which return the
blood which is carried by them are
4 in number and larger than the
Arteries - ~~one of them~~ ^{one of them is anterior, another} ~~they are~~ ^{posterior,}
and two are lateral. They are so large
Portal says that ^{they} might be called a
Sinus. These Veins probably serve by
their distension ^{to} aid the two Cavities
~~to~~ ^{I have} mentioned in relieving the
Medulla oblongata & Spinalis from the
ill effects of redundant blood when
thrown upon them. ✓

The Diseases of the ~~Medulla~~ ^{Medulla} Spinal
Marrow, or the brain in the Vertebra
~~with these~~ favour the theory I have
delivered of the Uses of the Cavities &

V and 2^{ly}: the water in the Spinal Bifida
penetrates the coats and ~~crosses~~ the
coats of the spinal marrow, whereas
the water in the

V in which case it perfectly agrees
in every respect with the Hydrocephalus
-lus ^{is} Externus. ~~From its position~~
~~it is named to the Hydrocephalus internus,~~
~~it ought to be called~~

N found two external openings
instead of one. It ^{was} ~~is~~ more
extended form of the same disease.

Spina Bifida
Sines ~~is it~~ which have been mentioned.

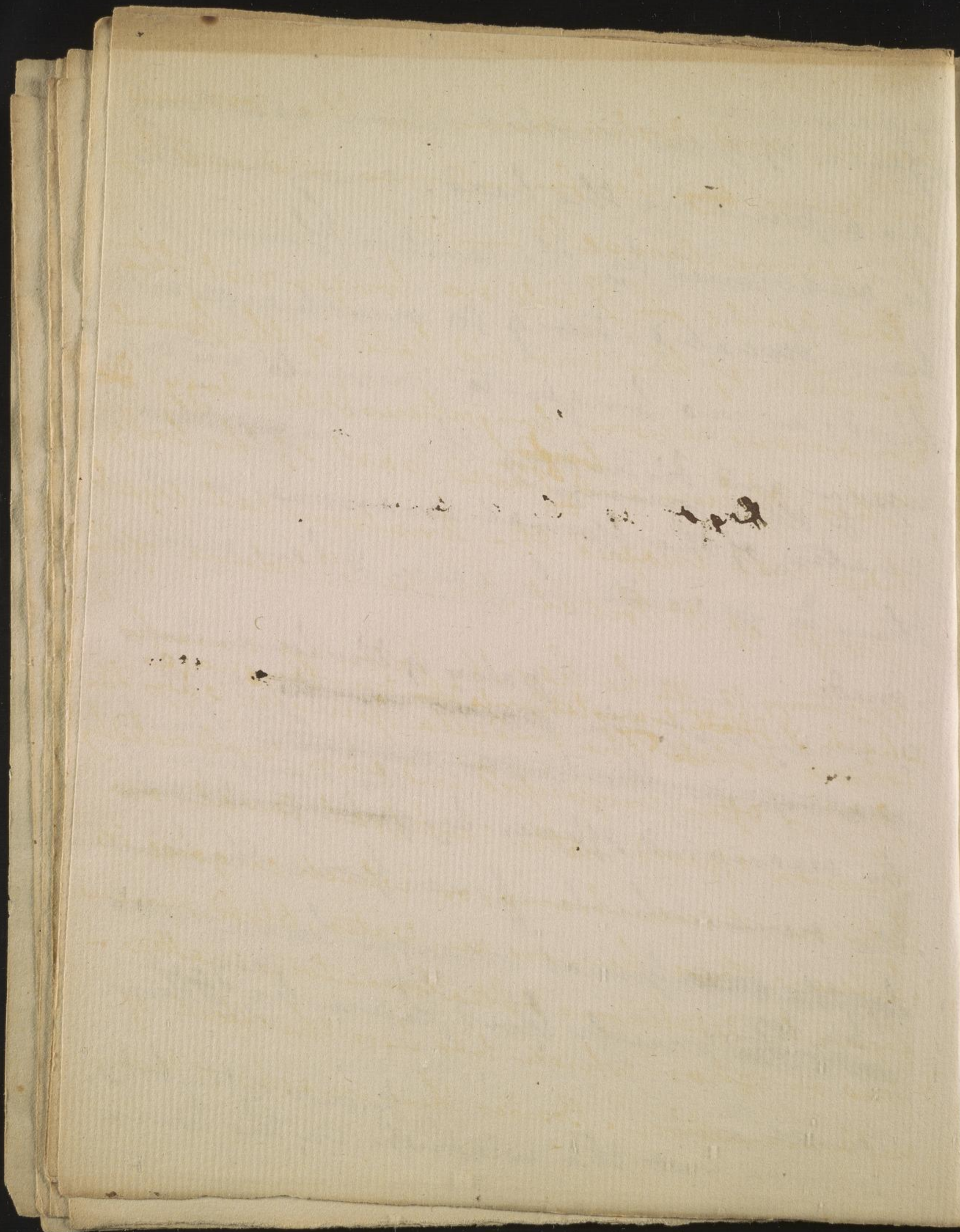
1 The Spina Bifida is nothing but an external drop of the Spinal Marrow in ~~so~~ every respect similar to the external drop of the brain, except ^{in the following particulars} that the external drop of the brain is induced by an opening of the surface of the brain - the Spina Bifida, by the absence ~~of a spinal process~~ of a spinal process of the Vertebra. ^{but it} sometimes it appears we are told with a gaping ~~of~~ or opening between two of the Vertebrae, — There is a case upon the discharge of water by Morgagni in which a puncture of ~~the brain~~ the Spina Bifida produced the collapse of a brain distended with Hydrocephalus ~~externus~~ ^{internus}. In this case the water 2 a severe pain in the back generally

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accompanying
signs of great morbid action as certainly
as a pain in the head. may not this
be occasioned by the cavities & sinuses I
have described, being so overcharged with
blood, as no longer to prevent its pressure
upon and distending the ~~direct~~
other coverings
matter of the spinal marrow, and
thus to excite the pain I have mention-
-ed.

3 may not the palsy of the lower limbs
~~be occasioned by the~~ and
~~be occasioned by the~~ of the bowels
the depression of
be occasioned often by ~~the~~
the nerves which issue from the spine
by the ~~and~~ spinal marrow being pressed
by too much blood, than by ~~any~~ other

cause?
4 may not the weakness in the lower
trunk of the body,



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the Dr adds "induration, softness, inflammation
 suppuration and Ulceration have been found
 in the medulla Spinalis. And there is no
 doubt but that like the brain is capable
 of being affected by Concussion". He then
 concludes by saying "in a word, the diseases
 of the medulla Spinalis have a great
 affinity with the diseases of the brain,
 and are more common than is generally
 supposed". ~~In Addition to this account of~~

~~The~~ The practical inference from all the
 facts and opinions that have been ~~mentioned~~ ^{delivered}
 are: The Necessity and Safety of ^{we} ~~the~~ Diseases of
 the brain from redundant blood. Were ^{we} to live
 agreeably to reason, the ventricles and ~~the~~
 sinuses of the brain would be sufficient
 to ~~prevent~~ prevent injury to it in common

3 In treating upon pulmonary consumption I advised the Application of Blisters between the shoulders along the Cervical & ~~vertebrae~~ Dorsal Vertebrae. I have repeatedly seen them do more service when applied there, than to the sides or breast. may not the reason ~~why~~ of this be - the blister opening congestion in the spinal Vertebrae which supply a portion of nerves which unite with the par Vagus & great Sympathetic nerves which ~~nerves~~ are distributed to the Thoracic & Abdominal viscera?

4 May not the efficacy of a Burgundy pitch plaster to ~~the~~ ^{the} external parts of the Cervical and dorsal Vertebrae, and of other stimulating applications to the same parts, ~~be owing to them~~ in the Hooping

causes, but the pursuits, pleasures, ^{habits} & ^{prices} of
civilized life, render them too scanty for
that purpose. The quantity of blood sent
to the brain requires the aid of the lacuna
apert the Ventricles and lateral sinuses in
the uses I have ascribed to him.

✓ I know the ^{use of the} waste cavities which I have
~~described~~ described in the Spinal Marrow, it
is alike obvious that many diseases
in the nervous & muscular parts of the
body which are supplied with nerves
from the Spinal Marrow, are, from the
inability of those cavities to afford ~~shelter~~
room for all the blood that is sent to
them, induced by ^{an excess of} ~~too much~~ ~~perhaps~~ blood
in the Spinal Marrow, and that they
require, especially in their first stage,
remedies, the reverse of what are too often

7
~~Large - be owing to ~~various~~ their~~
~~inducing such actions in the spinal~~
~~marrow, do?~~

✓ This, - from the sameness of its
canoe ~~very~~ with Hydropneumo
internus -

prescribed for them; I mean depleting re-
-medies. I shall illustrate ~~what I mean~~
~~by a reference to a single disease~~ what I
mean by a reference of a single disease.

I have said the Hydrocephalus internus is
~~caused by~~ ^{so much} ~~the blood~~
is induced by ~~the action of water~~ the blood
being ~~acted on~~ ^{offered} ~~to the~~ tent to the ~~brain~~
brain as to produce a passage of its serous
parts into the Ventricles, or by the force
of the blood forcing open the or widening the
Sutures ~~and~~ ^{and} ~~fitting the~~ ^{thus pro-}

during a Hydrocephalus internus externus.
I have said further that a disease similar to the
~~latter~~ ^{latter} is produced
in the Spinal marrow by the same cause.
but ^{tells us that}
Dr. Portal ~~tells us~~ ^{tells us that} water is found in the
its cavities. ~~this~~ ^{while} may be called

Hydro Vertebralis internus, ^{while} The Spina
Bifida ^{which} is produced by water forcing its

✓ Which are the effects of
fevers. I have called them apathetic
states of fever. —

way outwards by the destruction of
a spinal process, or by insinuating
itself between two of the vertebrae. ~~This~~
~~which~~ might be called a Hydrovertebra.
- is extremely ~~the only difference between~~ ✓

I shall apply the facts & principles
I have thus delivered to several other
diseases in the sequel of our lectures.

However ^{wisely and kindly} ~~great the precautions which~~
the peculiarities in the brain I have ~~noted~~
noticed appear to be intended to prevent its
diseases, from many circumstances they
are not always sufficient in common
with the Spleen, Thymus & Thyroid glands
& glandular vessels for that purpose. The
~~various~~ diseases of the brain from an
undue determination of blood to it are
numerous. At present, I shall ~~take~~
confine myself only to these diseases. ✓

